IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (currently amended)A data relay server for accessing a database server via a communication network in accordance with a query for a database received from a client computer, comprising:

first means for encrypting retrieval condition data included in ~~the~~ a query received from the client computer;

second means for producing a query message destined for said database server, including the retrieval condition data encrypted by said first means and an identifier of an encryption function used to generate the encrypted retrieval condition data;

third means for transmitting the query message produced by said second means to said communication network;

fourth means for receiving from said database server via said communication network, as a retrieval result, data matched with ~~said~~ the encrypted retrieval condition data retrieved by matching the data with the encrypted retrieval condition data,

wherein the matching is performed by encrypting ~~encrypted data from said database server~~at least one data item read out from a database in said database server using the encryption function designated by the identifier in the query

message and comparing the encrypted at least one data item to the encrypted retrieval condition data; and

fifth means for producing a response message for the client computer based on ~~the basis of~~ the retrieval result received by said fourth means and transferring the response message to the ~~requester~~ client computer.

2. (currently amended) The data relay server according to claim 1,

wherein the query received from said client computer designates at least one data item to be replied as a retrieval result, and

wherein the query message produced by said second means includes, as data items to be replied as a retrieval result, not only the data item designated by the query from said client computer, but also a data item corresponding to ~~said~~ the encrypted retrieval condition data.

3. (original) The data relay server according to claim 1, wherein the query message produced by said second means includes identification information of an encryption program for encrypting ~~said~~ the retrieval condition data.

4. (original) The data relay server according to claim 1, wherein the query message produced by said second means includes an encryption program for encrypting ~~said~~ the retrieval condition data.

5. (original) The data relay server according to claim 2, wherein said fifth means has means for re-searching the retrieval result received by said fourth means with the retrieval condition data included in the query received from said client computer, and said response message for said client computer indicates a result of said re-search.

6. (currently amended) The data relay server according to claim 1, further comprising:

sixth means for converting at least two queries received from different client computers into a linked query and supplying the linked query to said first means, ~~and~~

wherein said fifth means re-searches the retrieval results for said linked query received from said database server for data matched with the retrieval condition indicated by the original query issued by each of said client computers and produces a response message to each client computer.

7. (currently amended) The data relay server according to claim 2, further comprising:

sixth means for converting at least two queries received from different client computers into a linked query and supplying the linked query to said first means, ~~and~~

wherein said fifth means re-searches the retrieval results for said linked query received from said database server for data matched with the retrieval condition indicated by the original query issued by each of said client computers and produces a response message to each client computer.

8. (currently amended) The data relay server according to claim 1, further comprising:

sixth means for converting one query received from a client computer into at least two distributive queries and supplying the distributive queries to said first means,

wherein said second means converts one of the distributive queries including the retrieval condition data encrypted by said first means into a query message for said database server, and converts the other distributive query to a query message for a pre-designated another data relay server, ~~and~~

wherein said fifth means re-searches a retrieval result for the one of distributive queries received from said database server and a retrieval result for the other distributive query received from said another data relay server for data matched with the retrieval condition data indicated by the original query issued by said client computer, and produces a response message for the client computer.

9. (currently amended) The data relay server according to claim 2, further comprising:

sixth means for converting one query received from a client computer into at least two distributive queries and supplying the distributive queries to said first means,

wherein said second means converts one of the distributive queries including the retrieval condition data encrypted by said first means into a query message for

said database server, and converts the other distributive query to a query message for a pre-designated another data relay server, and

wherein said fifth means re-searches a retrieval result for the one of distributive queries received from said database server and a retrieval result for the other distributive query received from said another data relay server for data matched with the retrieval condition data indicated by the original query issued by said client computer, and produces a response message for the client computer.

10. (currently amended)A database server for executing information retrieval in response to a query message received from a communication network, comprising:

a database in which service information is stored; and

a database management system for searching said database for service information matched with a retrieval condition designated by said query message, ~~and~~

wherein said database management system comprises~~comprising~~:

means for encrypting a specific data item designated by said retrieval condition and read out from said database when said query message includes encrypted retrieval condition data and an identifier of an encryption program used to generate the encrypted retrieval condition data, and retrieving service information matched with said retrieval condition by ~~encrypted data~~ matching the encrypted specific data item to the encrypted retrieval condition data,

wherein the specific data item is encrypted using the encryption program identified by said identifier; and

means for transmitting a response message including the retrieved service information to the source of said query message.

Claim 11 (canceled).

12. (currently amended)A database access method comprising the steps of:

encrypting at least a part of a retrieval condition designated by a client, said at least part of said retrieval condition being retrieval condition data;

transmitting a query message including the retrieval condition, the encrypted retrieval condition data and an identifier of an encryption program used to generate the encrypted retrieval condition data ~~at least a part of which is encrypted~~ to a server having a database;

encrypting, in said server, a specific data item, which is designated by said retrieval condition and read out from said database, and retrieving service information matched with said retrieval condition by ~~encrypted data~~ matching the encrypted specific data item to the encrypted retrieval condition data,

wherein the specific data item is encrypted using the encryption program identified by said identifier; and

transmitting, as a retrieval result, the service information matched with said retrieval condition from said server to the source of said query message.

13. (currently amended) The database access method according to claim 12, further comprising a step of:

re-searching, by the source of said query message, the retrieval result received from said server in accordance with the retrieval condition designated by said client,

wherein the retrieval result received by the server includes a data item corresponding to ~~said~~ the encrypted retrieval condition data.